

REMARKS

Claims 1-9 are pending in this application, with claims 1 and 7 being independent.

Claims 2-9 have been amended; these changes are for the purposes of clarification only, and no change in scope of the claims is either intended or believed to be effected by the changes.

Claims 1-9 were rejected under 35 U.S.C. § 103(a) as being obvious from EP 0122432 B1 (Morita) in view of U.S. Patent No. 4,543,565 (Oberstein).

Applicant submits that independent claims 1 and 7, together with the claims dependent therefrom, are patentably distinct from the cited references for at least the following reasons.

Claim 1 is directed to a method of forming and transmitting signals from a fire alarm unit to a receiving-monitoring instrument via a communication line with the aid of a transmitting device which is a part of the fire alarm unit. The method includes self-testing operability of the fire alarm unit and determining a value of a monitored fire factor. The fire alarm unit is additionally provided with a logic device for comparing the value of the monitored fire factor with a permissible value. The signals, including signals indicating the operability of the fire alarm unit as judged from the self-testing and indicating that the permissible value of the monitored fire factor has been exceeded, are transmitted in an analog mode.

At paragraph 4 of the final Office Action, the Examiner states that both Morita and Oberstein are directed to monitoring fire and/or smoke alarm conditions, and that both analog and digital transmissions are conventional and widely used in various environments and arts. Applicant agrees. However, in Applicant's view, unknown before Applicant's invention was the principle of data processing which would make possible simultaneous transmission of two analog signals carrying different information via the same communication line.

It is development of such new physical principle of transmitting information via a communication line, which allows simultaneous transmitting in the analog mode via a single communication line (i.e., a pair of wires) of two signals carrying different information, which is achieved with the method of claim 1. As a result of application of this method, it does not only become possible to transmit through a (single) communication line (a pair of wires) information on a fire alarm, but also additional information on the results of a self-test.

The known conventional methods of signal transmission in the analog mode allow transmitting of just one type of information via a single communication line -- information on a fire factor. Transmission in the analog mode of another type of information (for example the results of a self-test) would require a second communication line (another pair of wires). This would make such method of data transmission more expensive, as it requires application of two communication lines (two pair of wires).

There are also known methods of signal transmission in the digital mode, which allow transmitting several kinds of information through a single communication line; however, the cost of that method of information transmission is much higher than the cost of information transmission in the analog mode, due to the application of expensive digital receiving-transmitting modules and special cables for a digital communication line.

Owing to the fact that in Morita two kinds of information are transmitted via a single communication line, it is evident that in Morita the digital mode of information transmission is used, not the analog mode, as is used in the method of claim 1. And at page 5 of the Office Action, the Examiner concedes that Morita does not teach the transmission line being a bipolar transmission in an analog mode.

In Oberstein, the digital mode of information transmission is *also* used, as explained below.

First, Applicant agrees that the signals carrying information on a fire alarm and results of a self-test transmitted in the applied method are the same as in Morita; however, a notable distinction in claim 1 is the very principle of transmitting these signals, which makes it possible to transmit these two signals via a single communication line in the inexpensive analog mode, which was impossible to implement at the time of Applicant's invention, as there was no known principle of structuring information which would have allowed transmitting two analog signals carrying different information simultaneously via a single communication line in the analog mode. As a result, the only signal that was transmitted within the analog method of transmission was the signal of the fire alarm, as discussed in the Background section of the present application. It was impossible to transmit the second signal of a notifier malfunction via the same communication line.

A method that makes it possible to transmit two different signals by means of an analog signal from a fire sensor via a single communication line to a receiving monitor is not taught or suggested by Morita and Oberstein, is not known today, and is not used. In view of this, self-testing of the operability of the alarm units is not carried out in sensors that transmit signals via an analog signal, because a method for transmitting information of self-testing results to the receiving monitor is not known, and such self-testing becomes virtually useless.

Therefore, the Applicant claims development of a new physical principle, a new technique of transmitting complex information in the form of two different signals, each transmitted in the analog mode via a single communication line from a fire alarm unit to the receiving-monitoring instrument. The claimed method of information transmission is implemented by interconnecting electric circuit components in a different/proper way, which makes it possible to transmit via a single communication line *both* the primary fire alarm signal *and* the signal of the notifier operability (see, e.g., examples 1-6 of the present

application<sup>1</sup>), with both signals being in the *analog* form.

In Applicant's view, the method of transmitting two different signals carrying different information, each transmitted in the analog mode, via a single communication line, constitutes a new technique of information structuring. This is a previously unknown method of transmitting two signals carrying different information in the analog mode via a single communication line, which constitutes the essence of this method, and is not evident for a person skilled in the art.

Application of a self-test in fire alarm notifiers is known, but it is implemented in sensors, which can transmit two and even more signals via a single communication line. However, such known fire alarm sensors transmit information to a receiving control device in the digital mode (see the Applicant's prototype, as well as Morita and Oberstein).

As to Oberstein, the known information source does not disclose a method of signal transmission from the sensor to the receiving control device, let alone a method of signal transmission in the analog mode, including one involving using variable polarity (bipolar). The above information source is related to a totally different art (a method and apparatus for monitoring an alarm system), namely, to algorithms of processing information in the receiving control device, which are to be fulfilled after the signal from the sensor has been received by the receiving control device. Here, the way in which the signal was received is irrelevant. However, according to Applicant's understanding, the inventors of Oberstein dealt with address sensors, which are known to transmit information to the receiving control device in the digital, not analog, mode. One of the reasons Applicant concludes this is that what is

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<sup>1</sup>It is of course to be understood that the references to various portions of the present application are by way of illustration and example only, and that the claims are not limited by the details shown in the portions referred to.

considered in Oberstein is processing of signals received separately/independently from a number of sensors. For example, column 3, lines 63-66 of Oberstein -- cited in the Office Action -- states: "The alarm system may contain any number of individual alarm units, each of which has a sensor S, an evaluation circuit AWS, and a transmitter UB." Receiving separate signals from several sensors is only possible in the address system, with the signal transmitted in the digital mode. Unlike in the address system, with transmission taking place in the analog mode it is impossible to determine which of the sensors has issued the signal.

Applicant draws the Examiner's attention to the fact that neither Morita nor Oberstein discloses a method of transmitting signals via an alternating (bipolar) communication line. The principle of transmitting two analog signals carrying different information via an alternating communication line is only disclosed in the applied method (see, for example, claim 7). The method of transmitting signals via a bipolar communication line has only become known to the Examiner from materials of the application in question, as both Morita, and Oberstein clearly disclose that the transmitting line is not a bipolar and analog mode, as it is a digital mode. It is only the digital mode, which allows obtaining the goals and results claimed in Morita and Oberstein.

At page 5 of the Office Action, the Examiner asserts that Morita discloses a method of forming and transmitting signals from a fire alarm unit to a receiving-monitoring instrument "via a bipolar communication line (Items I1 and I2)". However, the fact that two indexes I1 and I2 are used in Morita does not at all mean that it relates to a bipolar (alternating) signal. As was already noted in the Applicant's Response filed on February 21, 2008, in Morita a unipolar signal is described, though it has two levels designated as I1 and I2. The Examiner, respectfully, has apparently confused a set of two positive numbers with a set of two alternating numbers, one of which is positive while the other is negative. For example, in this

comparison, I1 and I2 in Morita will correspond to a set of two positive numbers +1 and +3, which is distinct from a set of alternating numbers +3 and -3, or +1 and -1, or +3 and -1.

Nothing in Morita or Oberstein, whether considered either separately or in any permissible combination (if any) would teach or suggest the claimed forming and transmitting analog signals via the same communication line from an alarm unit to a receiving-monitoring instrument, these signals carrying information about both a fire factor and self-testing results, wherein the self-testing result signal differs from an alarm signal, as in claim 1.

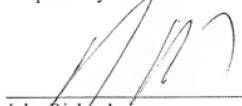
Accordingly, claim 1 is seen to be patentable over Morita and Oberstein, whether considered either separately or in any permissible combination.

Independent claim 7 recites features which are similar in many relevant respects to those discussed above in connection with claim 1. Accordingly, claim 7 is believed to be patentable for at least the same reasons as discussed above in connection with claim 1.

The other claims in this application are each dependent from one or the other of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Respectfully Submitted



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